What is claimed is:

1. The use of a mixture of one or more substances of group A) lubricin, proteoglycan 4 (PRG4) and phospholipids (SAPL) with one or more substances of group B) hyaluronic acid, glycosaminoglycan and derivatives of these substances dissolved in a solvent, for the production of an agent for treating defective or degenerated cartilage *in vivo*.

2. The use according to claim 1, characterized in that the phospholipids are surface active in nature.

3. The use according to claims 1 or 2, characterized in that the hyaluronic acid has a molecular weight of at least 1×10^6 Da.

4. The use according to one of the claims 1 to 3, characterized in that the ratio by weight of the substances of group A to the substances of group B ranges from 0.05 to 0.40.

5. The use according to one of the claims 1 to 3, characterized in that the ratio by weight of the substances of group A to the substances of group B ranges from 0.08 to 0.25.

6. The use according to one of the claims 1 to 5, characterized in that the solvent is a Ringer solution, preferably a physiological salt solution.

7. The use according to one of the claims 1 to 6, characterized in that the concentration of the substances of group A in the solvent range from 0.02 to 0.05 % by weight.

8. The use of one of the claims 1 to 7, characterized in that the concentration of the substances of group B in the solvent range from 0.2 to 0.4% by weight.

9. The use of a mixture of one or more substances of group A) lubricin, proteoglycan 4 (PRG4) and phospholipids (SAPL) with one or more substances of group B) hyaluronic acid, glycosaminoglycan and derivatives of the substances dissolved in a solvent, for the production of natural cartilage replacement *in vitro*.

10. Method for the production of a cartilage replacement material for cartilage defects in the joint region using a mixture of claim 9, characterized in that an open-pored, elastic cell-carrier body is populated in its pores with chondrocytes and a mixture of claim 9, dissolved in a physiologically acceptable solvent, is brought into contact with the chondrocytes.

11. The method of claim 10, characterized in that the solvent is moved over the cell-carrier body with a laminar flow.

12. The method of claims 10 or 11, characterized in that, by means of a joint-like device, an axial and a rotational force is exerted simultaneously on the cell-carrier body.

13. The method of claim 12, characterized in that the rotation of the joint-like device is carried out about two axes, which are orthogonal to one another.